

TABLE OF CONTENTS

ADVANCED DEGREES

DOCTOR OF PHILOSOPHY

Fidelity Optimization in Virtual Environments	3
Age Replacement Policies in Multiple Time Scales	4
A Boundary-Layer Model of Thermocapillary Flow in a Cold Corner	4

AERONAUTICAL AND ASTRONAUTICAL ENGINEER

Propagation of a Two-Phase Detonation Across a Geometric Diffraction with Compositional Discontinuity	5
---	---

MECHANICAL ENGINEER

An Experimental Approach for Studying Creep Behavior of Model Planar Interfaces	7
---	---

MASTER OF SCIENCE

AERONAUTICAL ENGINEERING

An Experimental Investigation of Flapping Wing Propulsion for Micro Air Vehicles	11
EA-6B Follow-On Study: UAVS and UCAVS	11
Transonic Compressor Test Rig Rebuild and Initial Results with the Sanger Stage	12
Implementation of a Two Probe Tip-Timing Technique to Determine Compressor Blade Vibrations	12
Optimal Parachute Guidance, Navigation, and Control for the Affordable Guided Airdrop System (AGAS)	13

APPLIED MATHEMATICS

Formation Control of Multi-Satellite Systems	15
An Evaluation of HNeT (Holographic Quantum Neural Technology) Software Package	15

APPLIED PHYSICS

Development of Shrouded Turbojet to Form a Turboramjet for Future Missile Applications	17
Amplitude and Temporal Jitter Associated with the NPS Active Mode-Locked Sigma Laser	17
Effects of Shipboard Compartment Fuel Fire and Fire Extinguishing on RF Signal Propagation in the 2.4 GHz ISM Band	18
Design, Construction, and Operation of an Electromagnetic Rail Gun Test Bench	19
Experimental Investigation of Sinking a Buoyant Body in Water with Bubbles	19
Influence of Ignition Energy, Ignition Location, and Stoichiometry on the Deflagration-to-Detonation Distance in a Pulse Detonation Engine	20
Measurement of Fuel Additive Effects on the Soot Mass Loading in Oxygen/Kerosene Exhaust Plumes	20
Magnetic Field-Induced Absorption of Short Ultra-Intense Laser Pulses	21

TABLE OF CONTENTS

ASTRONAUTICAL ENGINEERING

Design, Characterization, and Performance of a Valveless Pulse Detonation Engine	23
Calibration to Determine Pressure and Temperature Sensitivities of a Pressure-Sensitive Paint	23
Prototype Design of NPSAT Visible Imager	24
Feasibility of Two-Gimbal Platform Tumbling to Minimize Velocity Error (U)	24

COMPUTER SCIENCE

A Pro-Active Routing Protocol for Configuration of Signaling Channels in Server and Agent Based Active Network Management (SAAM)	25
Supporting a Trusted Path for the Linux Operating System	25
Demonstration of a Concurrently Programmed Tactical Level Control Software for Autonomous Vehicles and the Interface to the Execution Level Code	26
Target Identification Algorithm for the AN/AAS-44V Forward Looking Infrared (FLIR)	26
Development of Digital Data Acquisition Module and Interface for Analog Beartrap Mission Data	27
A Sockets Application Programming Interface for the Petite Amateur Naval Satellite	27
Static-Task Scheduling Incorporating Precedence Constraints and Deadlines in a Heterogeneous- Computing Environment	28
Transparent Detection of QOS Violations for Continuous Applications	28
The Application of a Viewpoints Framework in the Development of C4I Systems	29
Authentication in SAAM Routers	29
Application of Fault-Tolerant Computing for Spacecraft Using Commerical-Off-The-Shelf Microprocessors	30
A Trusted Connection Framework for Multilevel Secure Local Area Networks	31
Helicopter Urban Navigation Training Using Virtual Environments	31
Implementation and Evaluation of a Network Access Protocol	32

DEFENSE ANALYSIS

Classical Greek and Classical Chinese Warfare: A Comparative Analysis	33
Required Operational Capabilities for Urban Combat	33
Insurgency in Urban Areas: Implications for SOF	34
Defining DoD's Role in the Maritime Interdiction of NBC/M (U)	34

ELECTRICAL ENGINEERING

Analysis and Simulation of the Advanced Amphibious Assault Vehicle (AAAV) Electrical System Architecture	37
Dose Rate Response of Commercial-Off-The-Shelf Radiation-Hardened Power MOSFETs and Schottky Diodes	37
Computer Network Protocol Analysis (U)	38
Effects of Shipboard Compartment Fuel Fire and Fire Extinguishing on RF Signal Propagation in the 2.4 GHz ISM Band	38
Design of a Low Power Embedded Microprocessor for a Hands-Eyes-Ears-Free Personal Navigation and Communication System	39
An Investigation and Assessment of Linux IPChains and its Vulnerabilities with Respect to Network Security	40
Design and Implementation of a Human Presence Detection Sensor for Use with Autonomous Mobile Robots	40
Implementation of a Fault Tolerant Computing Testbed: A Tool for the Analysis of Hardware and Software Fault Handling Techniques	41

TABLE OF CONTENTS

ENGINEERING ACOUSTICS

Transient Localization in Shallow Water Environments with a Vertical Line Array	43
Evaluation of Improvements to an Underwater Acoustic Propagation Model Based on the Parabolic Equation	43

ENGINEERING SCIENCE

Analysis of Emissions from CRT and LCD Displays (U)	45
---	----

INFORMATION TECHNOLOGY MANAGEMENT

Intelligent Agents for Information System Operations (U)	47
Development of a Prototype Relational Database for Managing Fleet Battle Experiment Data	47
A Business Process Redesign of the U.S. Coast Guard Port State Control Boarding Process	48
Investigation into the Effects of Voice and Data Convergence on a Marine Expeditionary Brigade TRI-TAC Digital Transmission Network	49
Scalability Study of Wireless Tactical Communications in Support of a Marine Corps Expeditionary Brigade	49
Re-Engineering the Marine Corps Rifle Range	50
Authentication in SAAM Routers	50

INTERNATIONAL RESOURCE PLANNING AND MANAGEMENT

Factors Influencing Defense Expenditures – A Hungarian Perspective	53
Indonesia: Defining New Options in the Socio-Political Role of the Indonesian Armed Forces	53
Malaysian Economic Crisis: Causes, Effects, Recovery Actions, and Lessons Learned	54
Vietnam and the Spratly Islands Dispute Since 1992	54
The Balkans at the Turn of Century: Challenges for Greece and European Security Institutions	55
Management of Organizational Change: The Case of Hungarian Automation and Radar Department	55
Rwandese Patriotic Army Logistics Unit (G4) Assessment and Recommendations for Change	56
Comparison of Expert Judgment Methods Used for Modernization Decision: The Case of MIG-29	56

LEADERSHIP AND HUMAN RESOURCE DEVELOPMENT

Leadership Development for MOOTW: An Analysis of Tactical Lessons Learned	59
The Decision to Allow Military Women into Combat Positions: A Study in Policy and Politics	59
A Statistical Analysis of Retention in the Surface Warfare Community	60
The Naval Academy-Marine Corps Relationship: An Examination of the Marine Corps' Influence on the Academy and the Academy's Professional Impact on the Marine Corps Officer Corps	60
Analysis of Naval Flight Officer Selection, Assignment, and Flight School Completion Among U.S. Naval Academy Graduates	61
A Comparison of U.S. Navy Sea Air Land (SEAL) Teams and U.S. Army Special Forces	61
Leadership Traits and Characteristics of Effective Company Officers at the United States Naval Academy: The Midshipmen Perspective	62
Analysis of the Company Officer Management Information System (COMIS) Performance Measurement Software at the United States Naval Academy	62
The Impact of Athletic Achievement at the United States Naval Academy on Fleet Performance	63
An Analysis of the Effects of Prior Enlisted Service on Midshipman Performance, Graduation, And Fleet Retention at the U.S. Naval Academy	64
An Empirical Analysis of the Physical Aptitude Exam as a Predictor of Performance on the Physical Readiness Test	64
An Assessment of the Senior Enlisted Leader Program at the United States Naval Academy	65

TABLE OF CONTENTS

Teaching Tomorrow's Leaders: A Comparison of Leadership Development at the United States Military Academy and United States Naval Academy	65
---	----

MANAGEMENT

Structured Managerial Approach to Decision Processes Shaping Information Technology in Non-IT Organizations	67
Cost-Benefit Analysis of Providing a Special Subsistence Allowance to Military Personnel Who Qualify for Food Stamps	67
Determination of the Indirect Support Costs for the Morale, Welfare, and Recreation Department at the Naval Postgraduate School in Preparation for an Activity-Based Cost Analysis	68
Enterprise Resource Planning in the Naval Aviation Supply Chain and Maintenance Management Process	68
The Analytic Hierarchy Process as a Framework for Sourcing Decisions: Management, Operations, and Maintenance of a PBX	69
An Analysis of Protests of Contracts Awarded the Best Value Trade-Off Process from January 1998 through December 1999	69
Analysis of the Ongoing Process for Privatizing Utility Systems in the Navy	70
Obstacles to Democratization: The Role of Civil Societies	70
Evaluation of the Space and Naval Warfare Systems Command (SPAWAR) Cost and Performance Measurement	71
Verification of the Need for Hospital Corpsman Follow-On/Refresher Training	71
Enhanced Job Performance: A New Role for Military Compensation	72
The Implementation of Activity Based Costing and Management at the Naval Postgraduate School: A Teaching Case Study	72
Factors That Affect Success in Implementing Activity Based Cost Management in a Government Organization: A Comparative Case Study Analysis	73
The Army Oil Analysis Program (AOAP): Cost Benefit Analysis of Maintaining the Program for Ground Systems at Fort Hood, Texas	73
An Analysis of the Foreign Military Sales of the M1 Series Tank	74
A Functional Analysis of Consolidating the Navy and Marine Corps Recruiting Commands	74
An Activity-Based Cost Analysis of Recruit Training Operations at Marine Corps Recruit Depot, San Diego, California	75
Fleet Support Officer Fleet Training (FSOFT): Should a Sea Tour Be a Requirement?	75
A Comprehensive Analysis of the Environmental Remediation Industry	76
Developing a Core Competency Model for Information Systems Management Officers in the United States Army	76
Warranty/Cannibalization Issues, Disruptive Forces in the Production and Maintainability of the E-2C Aircraft	77
The Delayed Entry Program and Generation Y	77
Financial Ratio Analysis of Audited Federal Financial Statements	78
Outsourcing the Helicopter Combat Support Mission Aboard Military Sealift Command Ships: A Cost Comparison Study	78
A Cost Analysis of the Decision to Cannibalize Major Components of the Navy's H-60 Helicopters at the Operational Level	79
Evaluating Naval Air Warfare Center Aircraft Division (NAWCAD) Financial Management Practices in Preparation for Implementing ERP	79
Closing the Gap Between Budget Formulation and Execution	80
Study of the U.S. Navy's Philippines Enlistment Program, 1981-1991	80
A Case Study: Acquisition Reform and the Joint Primary Aircraft Training System (JPATS) Program	81
Analysis of the Theater High Altitude Area Defense (THAAD) Missile Test and Evaluation Program	81
Three-Dimensional Scanning	82
Implementing Activity-Based Costing and Management at the Naval Postgraduate School	82

TABLE OF CONTENTS

An Evaluation of Botswana's Economic Growth	82
Policies Contributing to the Solution of Illegal Large-Scale Migration in Central Europe	83
An Alternative Incentive System to Improve Productivity at the Turkish Naval Shipyards	83
An Analysis of the Integration of Decision-Making Modeling with Statistical/Quantitative Background for Master's Level Analytical Courses	84
Initial Cost Estimate of Outsourcing Information Systems Technician University	84
Inventory Management of Repairables in the U.S. Marine Corps – A Virtual Warehouse Concept	85
A Cost Benefit Analysis of the Depot Modification Field Teams for the T-45C Aircraft	85
Application of Corporate Outsourcing Methods to the Department of Defense	86
Guidance for Transitioning to Performance-Based Service Contracting – A Guide for Department of Defense Field Contracting Activities	86
An Analysis of the Contracting Process Used By the National Armed Force of Venezuela	86
Pediatric Outpatient Clinic Manpower Requirement Variables at Navy Medical Treatment Facilities	87
The Universal Fuel at Sea: Replacing F-76 with JP-5	87
Strategic and Performance Plans for Shore Installations	88
An Evaluation of the Application of Economic Analysis and Cost-Benefit Analysis Tools in the DoD Environment	88
The Military Housing Problem: Public Private Venture (PPV) and Complete Privatization Alternatives	89
Indonesian Financial Crisis: Causes and Remedies	89
The Regional Jet, Cancer or Cure? A Trend Analysis Detailing the Effects of the Regional Jet on the Quality of Air Service Offered at Small Community Airports	90
A Review of Contractor Logistics Support for the Maintenance of the Navy's T-45 Training System (T45TS)	90
Implementation of Total Quality Leadership in the Turkish Army Academy	91
Cost-Effective Alternatives for Disposal of Obsolete Navy Personal Computers	91
Cost Benefit Analysis of Monterey Pines Golf Course	92

MATHEMATICS

Inviscid Aerodynamic Predictions of Hypersonic Elliptical Projectiles: A Comparative Study of the Effects of Stabilizing Surfaces	93
--	----

MECHANICAL ENGINEERING

The Use of Neural Networks as a Method of Correlating Thermal Fluid Data to Provide Useful Information on Thermal Systems	95
Modeling the Progressive Flooding Characteristics of the Arleigh Burke Class Destroyer Using SIMSMART and Excel	95
Validation of Low Observable Stack Educator Design for Gas Turbine Exhaust Systems	96
Acoustically Forced Heat Transfer from a Tube Tank	96
Formation Control for Multi-Vehicle Robotic Minesweeping	96
An Experimental Approach for Studying Creep Behavior of Model Planar Interfaces	97
The Experimental Evaluation of a DGPS Based on Navigational Suite in the <i>ARIES</i> AUV	97

METEOROLOGY AND PHYSICAL OCEANOGRAPHY

El Niño and La Niña Effects on Tropical Cyclones: The Mechanisms	99
A Study on the Timing of the Southwest Monsoon Onset in the South China Sea	99
Sand Bed Roughness in the Nearshore, Coast 3D Experiment, Egmond AAN ZEE, the Netherlands	100
Large Eddy Simulation of Interactions Between Free Convection,, Wind Driven Currents, and Baroclinicity in the Laborador Sea Deep Mixed Layers	100
Understanding Mesoscale Error Growth and Predictability	101

TABLE OF CONTENTS

Estimation of Statocumulus-Topped Boundary Layer Depth Using Sea Surface and Remotely Sensed Cloud-Top Temperatures	101
Optimization of MAS and MODIS Polar Ocean Cloud Mask	102
The Role of the Planetary Beta Effect on Currents and Meddies in the Northern Canary Current System	103
Swell Transformation Across the Continental Shelf	103

OPERATIONS RESEARCH

Analysis of the Deterioration Rate of Ship Handling Proficiency of Surface Warfare Officers on Shore Duty	105
A Cost Model for Estimating Operating and Support Costs for United States Navy (Nuclear) Submarines	105
An Intelligent Agent Simulation of Shipboard Damage Control	106
The Relationship Between a Submarine's Maximum Speed and Its Evasive Capability	106
A Fast Heuristic for Tomahawk Land-Attack Predesignation	107
Solving Dynamic Battlespace Movement Problems Using Dynamic Distributed Computer Networks	107
A Multivariate Time Series Analysis of U.S. Army Recruiting	108
Using Neural Networks Within the Leaves of a Classification Tree	108
Service Level Optimization for the Marine Corps Institute	109
Human Factors Analysis of Fiscal Year 90 to 97 Rotary Wing and TACAIR Flight Mishaps	109
Campaign Analysis of a NATO Ground Forces Campaign in Kosovo	110
Comparison Study of Janus and HLA Warrior.....	110
Who Responds and How Long Does It Take? Assigning Fire Station Areas of Responsibility	111
Protecting the Force: Application of Statistical Process Control for Force Protection in Bosnia	111
Modeling and Analysis of Human Error in Naval Aviation Maintenance-Related Mishaps	112
Enumerating Near-Minimum Cuts in a Network	112
An Evaluation of the Aviation Maintenance Climate Assessment Survey (MCAS), Applied to the 3 rd Marine Air Wing	113
Human Factors Analysis of U.S. Navy Afloat Hazardous Material Mishaps	113
Graphic User Interface Design for Mapping, Information, Display, and Analysis Systems	114
An Evaluation of the Hydra-7 Countermine Weapon System	114
Ranger Air Load Planner	115
Optimizing Procurement of Special Operations Weapons and Equipment	115
Determination of Flight Training Performance: An Analysis of the Impact of Undergraduate Academic Background	116
Statistical Analysis of the Naval Inventory Control Point Repair Turn-Around Time Forecast Model	116
Optimal Positioning of Naval Precision Guided Munitions	117
The Flaming Datum Problem with Varying Speed	117
AIM-7 Sparrow MK-58 Rocket Motor Reliability and Life Data Analysis	118
Evaluating Demographic Item Relationships with Survey Responses on the Maintenance Climate Assessment Survey (MCAS)	118
Optimal Allocation of Selected T-Series Advanced Base Functional Component Equipment Packages	119
An Infinite Horizon Army Manpower Planning Model	119

PHYSICS

Impact Analysis of a Biomechanical Model of the Human Thorax	121
Terrain Categorization Using Multispectral and Multitemporal Imagery (U)	121
Observations of Quasi-Nonradiating Wave Sources in One Dimension	122

SOFTWARE ENGINEERING

Second Generation Ultra High Frequency (UHF) Satellite Protocol	123
---	-----

TABLE OF CONTENTS

An Architectural Framework for Integrating COTS/GOTS/Legacy Systems	123
---	-----

SYSTEMS ENGINEERING

Design, Prototyping and Measurements of Cavity-Backed Conical Spiral Wideband Antenna for Submarine Applications	125
Ultra-Wideband Radio Frequency Vest Antenna	125

SYSTEMS TECHNOLOGY

Using IT-21 Tools to Provide Asynchronous Distributed Learning (ADL) to the Fleet	127
Infrared Missile AIM-Point Modeling and Flare Countermeasure Effectiveness (U).....	127
Modeling Information Operations (IO): Engagement of the Decision-Making Infrastructure of China (U).....	128
Development of the Beartrap Post Mission Processing System 2000 (S2K) HTML Help Project	128
Automatically Generating a Distributed 3D Battlespace Using USMTF and XML-MTF Air Tasking Order, Extensible Markup Language (XML) and Virtual Reality Modeling Language (VRML)	129
Scalability Study of Wireless Tactical Communications in Support of a Marine Corps Expeditionary Brigade	130
The Application of a Viewpoints Framework in the Development of C4I Systems	130
Real-Time Radar Video Relay Via a Commercial-Off-The-Shelf (COTS) Wireless Lan	131
Beginner's User Guide for the MAGTF Tactical Warfare Simulation	131
Exploitation of Web Technologies for the Joint Battlespace Infosphere	132

MASTER OF ARTS

INTERNATIONAL SECURITY AND CIVIL-MILITARY RELATIONS

What Should the Role of the National Guard Be in the Joint Chiefs of Staff?	135
Negotiating for Civilian Control: Strategy and Tactics of Umkhonto We Sizwe (MK) in the Democratic Transition of South Africa	135
The Republic of Bulgaria and NATO-Partnership and Integration	136

NATIONAL SECURITY AFFAIRS

International Mediation and Negotiating Positions of Cyprus' Regional Conflict After the 1974 Turkish Invasion: Obstacles and Prospects to a Settlement	137
The War in Bosnia, 1992-1995: Analyzing Military Asymmetries and Failures	137
Peace on the Korean Peninsula	138
The Aegean Dispute and Its Implications for the U.S. Policy	138
The United Nations Small Arms Policy, the Second Amendment, and the Future of U.S. Military Operations	139
The Changing Application of Norms to Foreign Policy in U.S.-Japan Relations: An Alliance Based on "Shared Values and Interests"	139
Nuclear Weapons and the Revolution in Military Affairs	140
Will Democracy Bring Peace Across the Taiwan Strait?	140
British Policies Regarding the European Union's Emerging Defense Dimension	141
Engaging North Korea: Prospects for U.S. Counterproliferation Policy	141
The United States Army in Europe: Designing a New Force Structure for a New Era	142
Devrimci Sol: A Study of Turkey's Revolutionary Left and Its Impact on United States Interests, 1968-1999	142
Japan's Comprehensive National Security and the European Union's Common Foreign and Security Policy: Convergence Towards Global Cooperation?	143
Hasemite Survival Strategy: The Anatomy of Peace, Security and Alliance Making in Jordon	143
Palestinian Political Violence and Israel, 1948-1993	144

TABLE OF CONTENTS

The Visible Hand: The Government-Industrial Relationship and Its Effects on Transatlantic Arms Cooperation	144
Implications of Germany's Declining Defense Spending	145
Responding to Saddam: U.S. Policy Toward Iraq Since the Gulf War	145
The Republic of Bulgaria and NATO-Partnership and Integration	146
Baptism by Fire: Hungary's Participation in NATO's Kosovo Campaign	146
Bulgaria and NATO's Military Intervention in Yugoslavia	147
Hugo Chávez Frías' Presidential Election: The Institutional, Economic, and Cultural Dimensions of a Political Phenomenon	147
The Evolution of NATO: The Alliance's Strategic Concept and Its Predecessors, 1945-2000	148
U.S. National Missile Defense and Its Effect on U.S.-Russian Arms Control	148
U.S. Strategic Approaches to Ukraine	149
Dismantling Russia's Northern Fleet Nuclear Submarines: Environmental and Proliferation Risks	149
France, Germany and the Development of a European Security and Defense Identity	150
Switzerland and Its Relationship to European and Global Security Institutions	150
Women and the Palestinian National Movement: A Comparative Analysis	151
Potential Russian Nuclear Contingencies in the Caucasus: Implications for NATO	151
Civil-Military Relations in the Late Suarato Era	152
U.S. and Turkish Interests Concerning Oil Politics in the Caspian Sea Basin	152
STUDENT INDEX	153
ADVISOR INDEX	157